

**REMARKS**

The Examiner's comments in the Office Action mailed June 4, 2007 have been carefully considered. Claims 12, 23, 25, 26, and 28 remain pending in the application. An editorial revision has been made to claim 26 to correct a formal matter. The scope of the claims has not changed and no new matter has been added.

Reexamination and allowance of the pending claims is respectfully requested in view of the following comments.

**Allowed Claims**

Applicants thank the Examiner for allowing claim 12.

**Priority**

The claims of the present application have not been accorded the priority benefit of provisional application 60/155,611 (hereinafter "the '611 document"), filed September 23, 1999, because the Examiner states they are not fully supported by the provisional application.

Applicants respectfully traverse this assertion of non-support at least with respect to claim 26.

Claim 26 recites a stent delivery system for treatment of a vessel bifurcation. The '611 document discusses positioning a stent in a vessel on page E-1. The vessel bifurcation includes a main vessel and a branch vessel with the branch vessel having an ostium. At least FIGS. 1-4 of the '611 document show the main vessel M and the branch vessel B, which has an ostium where it meets the main vessel M. The system of claim 26 includes a stent having a wall defining a side opening between proximal and distal ends of the stent. The main stent 10 of the '611 document includes a side opening 11 in the wall of the main stent 10 as shown at least in FIGS. 1-4 and discussed on page E-1, lines 17-19.

The system recited in claim 26 also includes an ultrasound transducer positioned within the stent in axial and radial alignment with the side opening. The transducer 30 is shown in FIG. 3 of the '611 document as arranged in axial and radial alignment with the side opening 11. Also see at least page E-1, line 27 through page E-2, line 3 of the '611 document. The transducer in claim 26 is configured to transmit and receive ultrasound signals through the side opening to

align the side opening relative to the ostium of the branch vessel. See at least page E-2, lines 4-16 and FIGS. 3-6.

Accordingly, Applicants assert all of the features of claim 26 are disclosed on pages E1-E3 and in FIGS. 1-6 of Part E (Sheets 1-3 of 3) of the '611 document. Applicants, therefore, respectfully request claim 26 be accorded benefit of the September 23, 1999 priority date.

### **Claim Rejections**

#### **35 U.S.C. § 112**

Claims 23, 25, 26, and 28 have been rejected under 35 U.S.C. 112, first paragraph, as being unsupported in the disclosure as filed. Applicants respectfully traverse the rejection.

In particular, the Office Action asserts the disclosure as filed does not provide support for the transducer being positioned within the stent in axial and radial alignment with the side opening of the stent. The transducer 22 is shown in such a position in at least FIGS. 2 and 3A. Furthermore, the following citations from the specification provide support for the claim language:

"Transducer housing 24 is positioned so that ultrasound signals transmitted from transducer 22 pass through side hole 12 into the surrounding fluid or tissue."	Page 5, lines 4-5
"Transducer housing 24 is adapted to be translated axially along a longitudinal axis 200. In one embodiment, the axial translation of transducer housing 24 is made relative to stent 10."	Page 5, lines 29-33
"Drive cable 44 further permits rotation of housing 24, and hence the rotation of transducer 22. Preferably, such rotation is made relative to longitudinal axis 18."	Page 6, lines 1-7
"FIG. 6B depicts a similar view as shown in 6A, except the imaging transducer 22 is aligned with side hole 12."	Page 7, lines 13-14
"Preferably, ultrasound transducer 22 is aligned with side hole 12 at all times, so ultrasound signals are transmitted to and from transducer 22 through side hole 12. In this manner, gap 62 will be seen on the ultrasound images."	Page 8, lines 22-24

"In such an embodiment, transducer 22 would comprise a side-looking transducer facing side hole 12. In this manner, transducer 22 would be aligned with side hole 12 to facilitate side hole 12 alignment with branch vessel 16....Rotation of transducer 22 could then occur by rotating stent 10, with transducer 22 maintaining a vigilant eye towards side hole 12."	Page 10, lines 9-14
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For at least these reasons, Applicants assert the claim language is fully supported by the disclosure. Accordingly, Applicants request the rejection be withdrawn. Reexamination and allowance of the claims is respectfully requested.

35 U.S.C. § 103

Claims 23, 25, 26, and 28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Von Oepen (U.S. Patent No. 6,048,361) in view of O'Connor (U.S. Patent No. 6,398,792), Solomon (U.S. Patent No. 5,846,204) and Jang et al. (U.S. Patent No. 5,749,848). Applicants respectfully traverse the rejection.

Claim 23 recites, in part, an ultrasound transducer positioned within a stent in axial and radial alignment with a side opening of the stent.

In contrast, none of the cited references, either alone or in combination, disclose or suggest an ultrasound transducer positioned within a stent in axial and radial alignment with a side opening of the stent.

The Office Action admits Von Oepen fails to disclose or suggest an ultrasound transducer, but asserts O'Connor, Solomon, and Jang overcome the shortcomings of Von Oepen. Applicants respectfully disagree.

O'Connor does not disclose or suggest an ultrasound transducer positioned within a stent in axial and radial alignment with a side opening of the stent. The stent in O'Connor does not have a side opening. Even if the stent in O'Connor was modified to include the side opening disclosed in Van Oepen, no motivation is provided in any of the references to align the second transducer 32, 42 (or the first transducer 24) of O'Connor with the side opening. O'Connor merely discloses using the second transducer 32, 42 to observe the obstruction and the results of the radiation process. See e.g., *O'Connor*, col. 4, lines 1-4. O'Connor does not disclose or suggest viewing the body lumen to align a stent.

Jang does not overcome the shortcomings of Von Oepen and O'Connor. Jang also does not disclose or suggest an ultrasound transducer positioned in axial and radial alignment with a side opening of a stent. Rather, the work element 75 (including the transducer) of Jang is shown exterior of the prosthesis 90 in FIGS. 1 and 5 of Jang. The transducer in Jang determines the position of *edges* of the prosthesis to determine the position of the prosthesis in the body lumen. See e.g., *Jang*, col. 10, lines 21-25.

Further, no motivation is provided in Jang to align the transducer with an opening of the prosthesis. Jang does not even disclose positioning the work element 75 within the prosthesis 90. Therefore, even if the teachings of Jang were combined with the systems described in Von Oepen and O'Connor, no motivation is provided in any of these references to align a transducer housing axially and radially with a side opening of a stent. None of these references suggests an advantage to so aligning a transducer housing.

Solomon does not overcome the shortcomings of Von Oepen, O'Connor, and Jang. Solomon does not disclose or suggest an ultrasound transducer positioned in axial and radial alignment with a side opening of a stent. Moreover, Solomon does not even disclose or suggest positioning a transducer within a stent.

For at least these reasons, Von Oepen would not lead a person having skill in the art to the invention of claim 23, even in view of O'Connor, Jang, and Solomon. Claim 25 depends from claim 23 and is allowable for at least the same reasons. Withdrawal of the rejection and allowance of claims 23 and 25 is respectfully requested. Applicants do not otherwise concede the correctness of the rejection and reserve the right to make additional arguments if necessary.

Claim 26 recites, in part, an ultrasound transducer positioned within a stent in axial and radial alignment with a side opening of the stent.

In contrast, none of the cited references, either alone or in combination, disclose or suggest an ultrasound transducer positioned within a stent in axial and radial alignment with a side opening of the stent for at least the reasons discussed above with respect to claim 23. Claim 28 depends from claim 26 and is allowable over the cited references for at least the same reasons. Withdrawal of the rejection and allowance of claims 26 and 28 is respectfully requested. Applicants do not otherwise concede the correctness of the rejection and reserve the right to make additional arguments if necessary.

**Conclusion**

In view of the above amendments and remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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